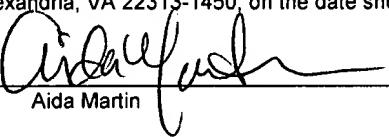


I hereby certify that this correspondence is being deposited with the US Postal Service with sufficient postage as First Class Mail in an envelope addressed to the Commissioner for Patents, P.O Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Date: July 30, 2007

By:



Aida Martin

**PATENT**  
**Docket No. GC637-2**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of )  
Schellenberger, et al. ) Group Art Unit:  
)  
Serial No.: 09/975,139 ) Examiner: Unassigned  
)  
Filed: October 10, 2001 )  
)  
For: Information Rich Libraries )

**Information Disclosure Statement**

Commissioner for Patents  
P.O Box 1450  
Alexandria, VA 22313-1450

Sir:

Applicants submit herewith patents, publications or other information (listed on the attached Form PTO-1449 and attached thereto) of which they are aware, that they believe may be material to the examination of this application and in respect of which there may be a duty to disclose in accordance with 37 CFR §1.56.

This Information Disclosure Statement:

- (a)  accompanies the new patent application submitted herewith. 37 CFR §1.97(a).
- (b)  is filed within three months after the filing date of the application or within three months after the date of entry into the national stage of a PCT application as set forth in 37 CFR §1.491.
- (c)  as far as is known to the undersigned, is filed before the mailing date of a first Office Action on the merits.
- (d)  is filed after the first Office Action and more than three months after the application filing date or PCT national stage date of entry filing but, as far

as is known to the undersigned, prior to the mailing date of either a final rejection or a notice of allowance, whichever occurs first, and is accompanied by either the fee (\$180.00) set forth in 37 CFR §1.17(p) or a certification as specified in 37 CFR §1.97(e), as checked below. Authorization to charge Deposit Account No. 07-1048 in the amount of \$180.00 to cover the cost of this Information Disclosure Statement is provided in the Transmittal Letter submitted herewith in duplicate.

(e)  is filed after the mailing date of either a final rejection or a notice of allowance, whichever occurred first, and is accompanied by authorization (in the Transmittal Letter submitted herewith in duplicate) to charge Deposit Account No. 07-1048 the fee (\$180.00) set forth in 37 CFR §1.17(l)(1) and a certification as specified in 37 CFR §1.97(e), as checked below. This document is to be considered as a petition requesting consideration of the Supplemental Information Disclosure Statement.

**[If either of boxes (d) or (e) is checked above, the following "certification" under 37 CFR §1.97(e) may need to be completed.]** The undersigned certifies that:

- Each item of information contained in the Information Disclosure Statement was cited in a communication mailed from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.
- No item of information contained in this Information Disclosure Statement was cited in a communication mailed from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned after making reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

A copy of the items on Form PTO-1449 is supplied: PCT International Search Report for PCT/US \_\_\_\_\_, filed \_\_\_\_\_ with attached patents and publications.

each  none  only those listed below:

Those patent(s) or publication(s) which are marked with an asterisk (\*) on the attached Form PTO-1449 are not supplied because they were previously cited by or submitted to the Office in a prior application, Serial No. \_\_\_\_\_, filed \_\_\_\_\_, and relied upon in this application for an earlier filing date under 35 USC 120.

A concise explanation of relevance of the items listed on PTO-1449 is:

- not given
- given for each listed item

given for only non-English language listed item(s)

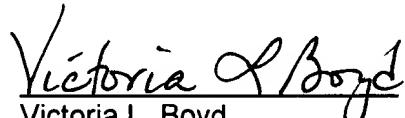
in the form of an English language copy of a Search Report from a foreign patent office, issued in a counterpart application, which refers to the relevant portions of the references.

The Examiner is reminded that a "concise explanation of the relevance" of the submitted prior art "may be nothing more than identification of the particular figure or paragraph of the patent or publication which has some relation to the claimed invention." MPEP §609.

While the information and references disclosed in this Information Disclosure Statement may be "material" pursuant to 37 CFR §1.56, it is not intended to constitute an admission that any patent, publication or other information referred to therein is "prior art" for this invention unless specifically designated as such.

In accordance with 37 CFR §1.97(b), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 CFR §1.56(a) exists. It is submitted that the Information Disclosure Statement is in compliance with 37 CFR §1.98 and MPEP §609 and the Examiner is respectfully requested to consider the listed references.

Respectfully submitted,

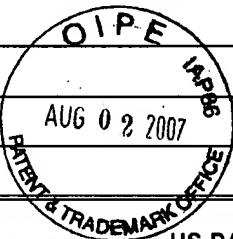
  
Victoria L. Boyd  
Registration No. 43,510

Date: July 30, 2007

Genencor International, Inc.  
925 Page Mill Road  
Palo Alto, CA 94304-1013  
Tel: 650 846-7615  
Fax: 650 845-6504

## INFORMATION DISCLOSURE CITATION

Attorney Docket No.: GC637-2	Serial No.: 09/975,139
Applicant: Schellenberger, et al.	
Filing Date: October 10, 2001	Group:
Page <u>1</u> of <u>3</u>	Date of this Submission: July 30, 2007



## US PATENT DOCUMENTS

Examiner's	Document				Sub-	Filing
Initial	Number	Date	Name	Class	Class	Date
	4,816,567	3/28/89	Cabilly, et al.			
	5,565,332	10/15/96	Hoogenboom, et al.			
	5,571,698	11/5/93	Ladner			
	5,681,610	11/5/96	Schloesser, et al.			
	5,681,702	10/28/97	Collins, et al.			
	5,698,426	12/16/97	Huse, et al.			
	5,723,323	3/3/98	Kauffman, et al.			
	5,830,721	11/3/98	Stemmer, et al.			
	5,922,545	7/13/99	Matheakis, et al.			
	6,107,059	8/22/00	Hart, et al.			
	6,114,149	9/5/00	Fry, et al.			

## FOREIGN PATENT DOCUMENTS

Examiner's	Document				Sub-	Translation
Initials	Number	Date	Country	Class	Class	Yes/No
	WO92/14843		PCT			
	2,276,169		United Kingdom			
	WO 91/19813		PCT			
	WO 92/05285		PCT			

## OTHER DOCUMENTS

Examiner's Initials	Author, Title, Date, Pertinent Pages, etc.
	Ballinger, <i>Biochemistry</i> 34:13312 (1995). <i>Designing Subtilisin BPN To Cleave Substrates Containing Dibasic Residues.</i>
	Ballinger, <i>Biochemistry</i> 35:13579 (1996). <i>Furilisin: A Variant of Subtilisin BPN' Engineered for Cleaving Tribasic Substrates.</i>
	Berger, et al., <i>Anal Biochem</i> 214:571 (1993). <i>Phoenix Mutagenesis: One-Step Reassembly of Mult ply Cleaved Plasmids with Mixtures of Mutant and Wild-Type Fragments.</i>
	Bock et al., <i>Nature</i> 1992 Feb 6, 355(6360):564-6. <i>Selection of single-stranded DNA molecules that bind and inhibit human thrombin.</i>
	Cao, <i>Technique</i> 2:109 (1990)
	Carotti, <i>Chem Biol Interact</i> 67:171 (1988)). <i>Qsar Analysis of The Subtilisin Hydrolysis of X-Phenyl Hippurates II A. Study of Subtilisin BPN.</i>
	Chatellier, et al., <i>Anal. Biochem.</i> 229:282 (1995). <i>Codon-Based Combinatorial Alanine Scanning Site-Directed MutagenesisL Design, Implementation, and Polymerase Chain Reaction Screening.</i>
	Cho, et al., <i>J Mol Biol</i> 297:309 (2000). <i>Constructing High Complexity Synthetic Libraries of Long ORFs Using In Vitro Selection.</i>
	Cote, et al. <i>Monoclonal Antibodies and Cancer Therapy</i> , Alan R. Liss, 1985, p. 77.

Applicant: Schellenberger, et al.

Filing Date: October 10, 2001

Group:

Page 2 of 3

Date of this Submission: July 30, 2007

	<i>Using In Vitro Selection.</i>
	Cote, et al. <i>Monoclonal Antibodies and Cancer Therapy</i> , Alan R. Liss, 1985, p. 77.
	Cumber et al. (1992) <i>J Immunology</i> 149B:120-126. <i>Comparative Stabilities In Vitro And In Vivo of a Recombinant Mouse Antibody FvCys Fragment and bisFvCys Conjugate</i>
	Dahiyat & Mayo, <i>Protein Sci.</i> 5:895 (1996). <i>Protein Design Automation. Protein design automation.</i>
	Dayhoff, et al., <i>Atlas of Protein Sequence and Structure</i> (Natl. Biomed. Res. Found., Washington), Vol. 5, Suppl. 3, pp. 345-358 (1978)). <i>A Model Of Evolutionary Change in Proteins</i>
	Deng, et al., <i>Anal Biochem</i> 200:81 (1992). <i>Site-Directed Mutagenesis Of Virtually Any Plasmid By Eliminating a Unique Site.</i>
	Ehrlich et al. (1980) <i>Biochem</i> 19:4091-4096); <i>Isolation of an Active Heavy-Chain Variable Domain From A Homogeneous Rabbit Antibody by Cathepsin B Digestion of the Aminoethylated Heavy Chain.</i>
	Gaytan, et al., <i>Chem Biol</i> 5:519 (1998); <i>Combination of DMT-mononucleotide and Fmoc-Trinucleotide phosphoramidites in oligonucleotide synthesis affords an automatable codon-level mutagensis method.</i>
	Gobel, et al., <i>Proteins</i> 18:309 (1994). <i>Correlated Mutations and Residues Contacts in Proteins.</i>
	Goldman & Youvan, <i>Bio/Technology</i> 10:1557 (1992); <i>An Algorithmically optimized combinatorial library screened by digital imaging spectroscopy.</i>
	Goldman, et al., <i>Drug Development Research</i> 33:125(1994). <i>Estimating proteins Functions From Combinatorial Sequence Data Using Decision Algorithms and Neural Networks.</i>
	Gribskov (Gribskov, <i>Proc. Nat'l Acad. Sci. USA</i> 84:4355 (1987). <i>Profile analysis: Detection of distantly related proteins.</i>
	Haaparanta & Huse, <i>Mol Divers</i> 1:39 (1995)) <i>A Combinatorial method for constructing libraries of long peptides displayed by filamentous phage.</i>
	Horton, et al., <i>Gene</i> 77:61 (1989); <i>Engineering hybrid genes without the use of restriction enzymes: gene splicing by overlap extension.</i>
	Huang & Santi, <i>Anal Biochem</i> 218:454 (1994); <i>Identification of Biologically Active Mutants by Combinatorial Cassette Mutagenesis: Exclusion of Wild-Type Codon from Degenerate Codons.</i>
	Hubbard, <i>Protein Eng</i> 1:159 (1987) <i>Comparison of solvent -inaccessible cores of homologous proteins: definitions useful of protein modelling.</i>
	Huse et al., <i>Int Rev Immunol.</i> 1993;10(2-3):129-37; <i>Increased Antibody Affinity and Specificity by Codon-Based Mutagenesis</i>
	Huston et al. (1988) <i>Proc Natl Acad Sci USA</i> 85:5879-5883); <i>Protein engineering of antibody binding sites: Recovery of specific activity in anti-digoxin single-chain Fv analogue produced in Escherichia coli</i>
	Inbar et al. (1972) <i>Proc Natl Acad Sci USA</i> 69:2659-2662. <i>Localization of Antibody-Combining Sites Within the Variable Portions of Heavy and Light Chains.</i>
	Jensen, et al., <i>Nucleic Acids Res</i> 26:697 (1998) <i>Scoring functions for computational algorithms applicable to the design of spiked oligonucleotides.</i>
	Jespers, et al., <i>J. Mol. Biol.</i> 290:471 (1999). <i>Guiding a Docking Mode by Phage Display: Selection of Correlated Mutations at the Staphylokinase-Plasmin Interface.</i>
	Kirkham et al., <i>J Mol Biol.</i> 1999 Jan 22;285(3):909-15. <i>Towards the Design of an Antibody that Reconises a Given Protein Epitope.</i>
	Krogh, "An introduction to Hidden Markov models for biological sequences," in <i>COMPUTATIONAL METHODS IN MOLECULAR BIOLOGY</i> , Salzberg, et al., eds, Elsevier, Amsterdam.
	Kunkel, <i>Proc Natl Acad Sci U S A</i> 1985 Jan;82(2):488-92; <i>Rapid and efficient site-specific mutagenesis without phenotypic selection.</i>
	Lahr, et al., <i>Proc. Nat'l Acad. Sci. USA</i> 96:14860 (1999). <i>Patterned library analysis: A Method For The Quantitative assessment of hypotheses concerning the determinants of protein structure.</i>
	Leach et al. (1992) <i>J. Am. Chem. Soc.</i> 114:3675-3683 and Switzer et al., <i>supra.</i>
	Ling & Robinson, <i>Anal Biochem</i> 254:157 (1997)). <i>Approaches to DNA Mutagenesis An Overview</i>
	Lockless & Ranganathan, <i>Science</i> 286:295 (1999); <i>Evolutionarily Conserved Pathways of Energetic Connectivity in Protein Families.</i>
	Lyttle, et al., <i>Biotechniques</i> 19:274 (1995); <i>Mutagenesis Using Trinucleotides B-Cyanoethyl Phosphoramidites.</i>

Applicant: Schellenberger, et al.

Filing Date: October 10, 2001

Group:

Page 3 of 3

Date of this Submission: July 30, 2007

	Mantsch et al. (1993) Biochem. 14:5593-5601. <i>Structural and Enzymatic Properties of Adenine 1-Oxide Nucleotides.</i>
	Needleman & Wunsch, J. Mol. Biol. 48:443 (1970). <i>A General Method Applicable to the Search for Similarities in the Amino Acid Sequence of Two Proteins.</i>
	Novere et al. (Biophys. Journal v.76 , p. 2329-2345, May 1999. <i>Improved Secondary Structure Predictions for a Nicotinic Receptor Subunit:</i>
	Overington, et al., Protein Sci 1:216 (1992) <i>Environment-specific amino acid substitution tables: Tertiary templated and prediction of protein folds.</i>
	Pack et al. (1992) Biochem 31:1579-1584: <i>Miniantibodies: Use of Amphipathic Helices To Produce Functional, Flexibly Linked Dimeric Fv Fragments with High Avidity in Escherichia coli</i>
	Pazos, et al., Comput. Appl. Biosci. 13:319 (1997). <i>A graphical interface for correlated mutations and other protein structure prediction methods.</i>
	Pearson & Lipman, Proc. Nat'l. Acad. Sci. USA 85:2444 (1988). <i>Improved tools for biological sequence comparison.</i>
	Piccirilli et al. (1990) Nature 343:33-37. <i>Enzymatic incorporation of a new base pair into DNA and RNA extends the genetic alphabet.</i>
	Riechmann et al. (1988) Nature 332:323-327; <i>Reshaping human antibodies for therapy</i>
	Shi, et al., PCR Methods Appl. 3:46 (1993); <i>Rapid PCR Construction of a Gene-Containing Lym-1 Antibody Variable Regions</i>
	Smith & Waterman, Adv. Appl. Math. 2:482 (1981) <i>Comparison of Biosequences</i>
	Sondek & Shortle Proc. Nat'l Acad. Sci. USA 89:3581 (1992)). <i>A General Strategy for Random Insertion and substitution mutagenesis Substoichiometric coupling of trinucleotide phosphoramidites</i>
	Switzer et al. (1993) Biochemistry 32:10489-
	Thompson, J. D., D. G. Higgins, et al. (1994). Nucleic Acids Res 22(22): 4673-80]. <i>Clustal W: improving the sensitivity of progressive multiple sequence alignment through sequence weighting position-specific gap penalties and weight matrix choice.</i>
	Tomandl, et al., J. Comp.-Aided Molec. Design 11: 29 (1997)). <i>Optimizing doped libraries by using genetic algorithms.</i>
	Tor et al. (1993) J. Am. Chem. Soc. 115:4461-4467. <i>Site-Specific Enzymatic Incorporation of an Unnatural Base, N6 Isoguanosine, into RNA.</i>
	Tuerk et al., Proc Natl Acad Sci U S A 1992 Aug 1, 89(15):6988-92. <i>RNA pseudoknots that inhibit human immunodeficiency virus type 1 reverse transcriptase.</i>
	Verhoeyan et al. (1988) Science 239:1534-1536. <i>Reshaping Human Antibodies: Grafting an...</i>
	Virnekas, et al., Nucl. Acids Res 22:5600 (1994) <i>Trinucleotide phosphoramidites:ideal reagents for the synthesis of mixed oligonucleotides for random mutagenesis.</i>
	Winter et al. (1991) Nature 349:293-299. <i>Man-made antibodies</i>
	Zoller, Curr Opin Biotechnol 3: 348 (1992) <i>New recombinant DNA methodology for protein engineering</i>

Examiner

Date Considered

Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not

considered. Include copy of this form with next communication to applicant.

PTO-1449